Challenges in landscape planning: the rural-urban interface

Planning for the Global Urban Agenda

Shaping Ecodistricts in Tokyo suburbs

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978-88-85745-15-5 (electronic version)
Published by Politecnico di Torino (Italy), June 2018

Accessible on: *http://www.biblio.polito.it/risorse/catalogo/isbn_del_politecnico_di_torino*

Layout by Giorgia Greco
Cover: photo by Giorgia Greco (2018)

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THE UNIVERSITY OF TOKYO

POLITECNICO DI TORINO

Acknowledgments

This book study is the outcome of research programs and didactical activities developed at the Politecnico di Torino and at The University of Tokyo, and of their collaboration in the framework of the joint project UNI-NUA - Implementing the United Nations' New Urban Agenda. Universities in action".
The On-Site Workshop "Planning for the Global Urban Agenda. Shaping Ecodistricts in Tokyo Suburbs" (March 2018) was organized in collaboration with the Nishi-Tokyo City Urban Planning Committee. Department of Urban Engineering, School of Engineering, UTokyo devoted the Urban Project Studio to such topic, and then shared preparatory materials and outcomes.
The School of Planning and Design of the DIST Inter-University Department of Urban and Regional Studies and Planning of the Politecnico di Torino supported the PoliTO students' participation, on the occasion of the launch of the "Planning for the Global Urban Agenda" Curriculum of the MSc in Territorial, Urban, Environmental and Landscape Planning.
The research staff mobility was made possible by the financial support of the UNI-NUA Project by Politecnico di Torino and Compagnia di San Paolo. Coordinators: Claudia Cassatella and Akito Murayama; research group: Giancarlo Cotella, Kaoru Matsuo, Marco Santangelo, Akiko Iida, Fumihiko Seta, Takahiro Yamazaki.

SECTION I

Planning for the Global Urban Agenda

SECTION II

Shaping Ecodistricts in Nishi-Tokyo

Challenges in landscape planning: the rural-urban interface

C. Cassatella, A. Iida

1. Global challenges and goals.

Half of humanity – 3.5 billion people – lives in cities today. In the EU, 72% of the total population live in cities, whose surface area has increased by 78% since the mid-1950s. In Japan, according to the census data in 2015, 91% of total population live in cities and particularly 68 % live in DID (Densely Inhabited Districts), whose surface area has increased by 331% since 1960 with rapid economic growth.

Rapid urbanization is exerting pressure on natural ecosystems and rural areas, resulting in land take, soil sealing, and decrease of open spaces. The loss of productive agricultural land affects world's food security. Moreover, the abandonment of rural activities means lack of maintenance of the land, environmental risks and landscape changes. Rural areas are also considered a source of essential ecosystem services (MEA, 2005), such as air and water quality, biodiversity, amenities and recreation, and renewable energy sources.

But, urban and rural categories are not sufficient anymore to describe the actual phenomena. Peri-urban, and rur-urban categories emerged in the last decades. For instance, 35.3% of the EU population live in intermediate regions (where the rural population is between 20% and 50%), which lead Eurostat (the European Commission's statistical office) to establish a new urban-rural typology. Peri-urban areas were defined as "discontinuous built development, containing settlements of less than 20,000, with an average density of at least 40 persons per km2" (PLURIEL, 2010). "There are urban pressures on peri-urban areas: housing shortages, transport congestion, decline of landscape quality, economic restructuring and social change. On the other hand, there are positive effects, such as proximity to markets and work places, quality of life, and innovation." (PLURIEL, 2010). In Japan, the situation is slightly different from the European one. The rural and urban land uses are mixed even in DID where the average density is more than 4,000 persons per km2. In fact, about 5% of the land in DID are rural land uses such as farmlands and forest. The urban sprawl resulted in the widespread mosaic land uses. And accordingly, functional linkages and conflicts between urban and rural areas can be found in peri-urban areas, as seen in Europe.

These conflicting developments highlight the need for a more integrated approach to rural-urban development, taking into consideration the economic, environmental, climate, demographic and social challenges, and the variety of linkages and opportunities. In 2013 OECD proposed a 'Rural-Urban Partnerships: an integrated approach to economic development'. The EU policy framework 2014-2020 fosters a better coordination of structural funds and new tools, such as integrated actions, community-led development and integrated territorial investments (EPRS, 2016), multi-level governance interactions. "Support positive economic, social and environmental links between urban, per-urban and rural areas by strengthening national and regional development planning" is also one of the targets of the UN Sustainable Development Goals n.11 (Make

Farmlands within the urban fabric of Nishi-Tokyo.
(photos: C. Cassatella, 2018)

cities and human settlements inclusive, safe, resilient and sustainable) (UN, 2015). The debate about the UN New Urban Agenda (2016) enlightens that decision making is made in urban areas, as long as urban population is the majority. Land use planning is one of the outcomes of decision-making processes, usually carried out by "urban" experts, which should be aware of the existence of specific resources, values, and interests of rural population, as well as of the fact that urban population need food supply and other services provided by rural areas. In addition, our life depends on resources provided by natural areas, without inhabitants and without voices.

2. Landscape planning solutions

Landscape planning (LP) can contribute to the above-mentioned goals, providing spatial scenarios and strategies at multiple scales. In fact, LP is based on the principle of integrating natural processes into spatial planning and territorial development, with a multifunctional approach. Traditionally, LP focuses on open spaces, but it may deal with the entire territory (see, in particular, the European Landscape Convention, 2000). General principles include: protecting natural resources such as soil and water; protecting biodiversity and ecological connectivity; protecting local identity expressed in cultural and natural heritage; enhancing quality of life, quality of everyday environment; enhancing landscape enjoyment, open door activities and recreation.

LP makes use of spatial concepts (such as green belt, green infrastructure) with a design approach. Nevertheless, it also deals with processes and addresses a variety of policies, programs and management tools for achieving its goals, so fostering strategic processes and multilevel governance interactions.

A spatial concept particularly successful, in terms of political agendas and related financial provisions, is the concept of green infrastructure (GI), thanks to its flexibility. "Green Infrastructure is built up of various, both natural and artificial elements at different scales and can be classified by their function" (CeeWeb and ECLC 2013). "GI: a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. (…) On land, GI is present in rural and urban settings" (EC, 2013).

3. GI implementation in metropolitan areas.

Due to the heterogeneity of possible components of a GI, it is impossible to present a comprehensive overview of how to plan and realize them. According to Austin (2014), GI planning can be implemented by a few tools, namely: resource protection; comprehensive planning; transfer of development rights; incentives and technical assistance. The following notes focus on how to preserve open spaces within metropolitan areas, acting at local level, discussing opportunities and threats.

A, Creation of protected areas, such as natural parks, or

agricultural parks. Despite farmlands may be considered an asset in metropolitan areas, protective designations of highly valued landscapes are an option not so likely, as ordinary or degraded areas may coexist and affect their integrity. However, the establishment of "agricultural parks" (with related agencies for their management and planning) has been experienced. This approach may cause social tensions on the boundaries of the areas.

B, Restrictive measures on building activity. Some municipal plans pursue the "zero-soil sealing" objective, stating that open areas cannot be used for development. The threat is that they can be abandoned.

C, Creation of public urban green areas, through the acquisition of land by Municipalities, has a tradition in open space planning. The acquisition may proceed by expropriation in the name of public interest or transfer (consequence of regulations for quantitative standards of public facilities) or, by transfer of development rights among areas – a financial technique of urban planning. In this case, it must be noticed that the availability of areas for greening depends on building activity.

D, Technical assistance and incentives, usually by a regional or national body, are useful tools for developing GI at local level, in a multilevel governance approach and multi-sectoral perspective. For instance, the EU Rural Development Policy funding system recognize the economic value of the so-called "environmental services", which can be provided by farming activity: new plantations for restoring habitats, set-aside of land, conservation of traditional built environment, creation of paths and farmhouses for rural hospitality. The mechanism is on voluntary basis, and spatial targeting of funding is an open question.

(CEEweb, ECLC 2013) suggest some "Keys to success for Green Infrastructure projects", emphasizing multifunctionality, involvement different stakeholders at all stages, utilization of different funds, good understanding and communication of benefits.

The above-mentioned tools imply the central role of public institutions. Besides, the role of bottom-up initiatives from citizens in preserving and managing green spaces may be further investigated (GreenSurge, 2016).

4. The Case-study of Nishi-Tokyo (Japan)

Tokyo Metropolitan Government made two regional green master plans as tools of comprehensive landscape planning: "Master Plan for Creation and Improvement of Urban Parks" (2006, revised in 2011) with the aim of creating ecological network and improving resiliency to natural disaster; and, "Master Plan for Conservation of Green Spaces" (2010, revised in 2016) in order to conserve private green spaces.

Japanese cities have less urban public parks than the cities in western countries. For instance, the per capita urban parks spaces are 26.9 m2 in London, 18.6 m2 in NY, 11.6 m2 in Paris (MLIT, 2017), but only 3 m2 in Tokyo metropolitan area and 1.3 m2 in Nishi-Tokyo city. However, some private green spaces, which are the remains of rural era, still play important role as green infrastructure. Namely, farmlands, yashikimori (small forest around farmer's house), and forests of shrines and temples. If we include these private green spaces, the per capita green spaces in Nishi-Tokyo increase to 10.3 m2. Therefore, the municipality is now trying to conserve these assets with various planning tools.

In particular, the "Productive Green Zone" (PGZ) (Seisan Ryokuchi Chiku) system was established in 1974 and revised in 1992 in order to conserve farmlands with tax incentives. Because of the PGZ system, the urban farmlands have been kept in dense residential area. In 2017, the law was re-revised in order to encourage urban faming and the farmers receives more incentives such as the permission of building agricultural facilities in residential area.Another example is the "Green Conservation Zone" (GCZ) (Tokubetsu Ryokuchi Hozen Chiku) system established in 2004. The GCZ is the permanent contract between municipality and land owner for keeping private green spaces at the condition of a partial accessibility to the public. Land owner can receive tax incentives, as well as expense for maintenance. These incentives and assistance has allowed land owners to keep their rural land uses such as farmlands and forest in highly urbanized regions.

Japanese society is now facing population decline and urban shrinkage. The estimation of future population shows that only 9% of the existing Urban Population

Area will keep population in 2050, but the rest will be depopulated. This demographic change will lead to issues such as limited tax income of public sector and emergence of vacant lots and houses. However, at the same time, it will also bring opportunities such as the improvement of density of residential area and the increase of accessibility to green spaces.
In order to overcome the conflicts of urban and rural land uses in intermediate regions and create the new relationships, landscape planning will play a key role. Italian and Japanese students' work illustrated in this book shows new ideas for conserving urban green spaces and enhancing their multi-functionality, for example, using market-based financial mechanism such as the transfer of development rights. It is just a beginning of the new challenges for urban-rural interface, further discussions are needed.

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*C.C. and AI jointy wrote par. 1; C.C. sect. 2, 3; A.I. Sect. 4.

Private farmland protected by "Productive Green Zone" (above) and private forest protected by "Green Conservation Zone" (below).
(photos: A. Iida, 2018)